

## 2.8 GRAPHING ABSOLUTE VALUE FUNCTIONS

### STEPS

- ① FIND VERTEX
- ② CHECK  $x$ -values to right & left of vertex
- ③ DRAW two rays

Ex 1  $y = |x+2| + 3$

Vertex:  $(-2, 3)$

$x = -3$

$$y = |-3+2| + 3$$

$$y = |-1| + 3$$

$$y = 1 + 3$$

$$y = 4$$

$$(-3, 4)$$

$x = -1$

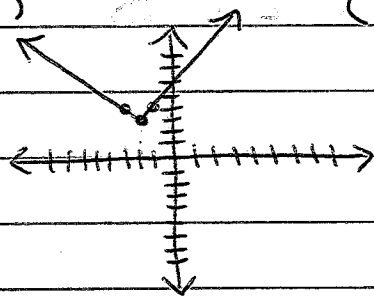
$$y = |-1+2| + 3$$

$$y = |1| + 3$$

$$y = 1 + 3$$

$$y = 4$$

$$(-1, 4)$$



Ex 2  $y = \frac{1}{2}|x-1| - 2$

Vertex:  $(1, -2)$

$x = 0$

$$y = \frac{1}{2}|0-1| - 2$$

$$y = \frac{1}{2}|-1| - 2$$

$$y = \frac{1}{2}(1) - 2$$

$$y = \frac{1}{2} - \frac{4}{2}$$

$$y = \frac{3}{2}$$

$$(0, \frac{3}{2})$$

$x = 2$

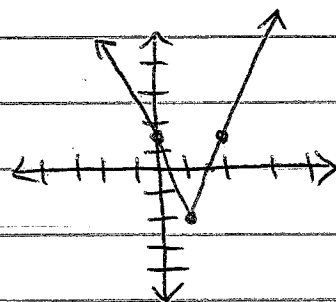
$$y = \frac{1}{2}|2-1| - 2$$

$$y = \frac{1}{2}|1| - 2$$

$$y = \frac{1}{2} - \frac{4}{2}$$

$$y = \frac{3}{2}$$

$$(2, \frac{3}{2})$$



Ex 3  $y = -2|x+1|$

Vertex:  $(-1, 0)$

$$x = -2$$

$$y = -2|-2+1|$$

$$y = -2|-1|$$

$$y = -2(1)$$

$$y = -2$$

$$(-2, -2)$$

$$x = 0$$

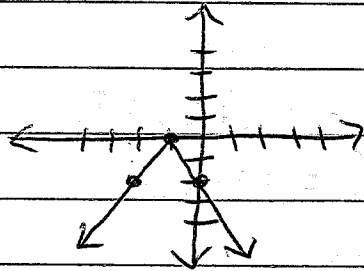
$$y = -2|0+1|$$

$$y = -2|1|$$

$$y = -2(1)$$

$$y = -2$$

$$(0, -2)$$



Homework: WORKSHEET 2.8 B #